NEXCOM International Co., Ltd.

Network and Communication Solutions

Network Security Appliance

NSA 3150

User Manual

NEXCOM International Co., Ltd.
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Preface

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Acknowledgements

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Regulatory Compliance Statements

This section provides the FCC compliance statement for Class B devices and describes how to keep the system CE compliant.

Declaration of Conformity

FCC

This equipment has been tested and verified to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area (domestic environment) is likely to cause harmful interference, in which case the user will be required to correct the interference (take adequate measures) at their own expense.

CE

The product(s) described in this manual complies with all applicable European Union (CE) directives if it has a CE marking. For computer systems to remain CE compliant, only CE-compliant parts may be used. Maintaining CE compliance also requires proper cable and cabling techniques.

RoHS Compliance

NEXCOM RoHS Environmental Policy and Status Update

NEXCOM is a global citizen for building the digital infrastructure. We are committed to providing green products and services, which are compliant with European Union RoHS (Restriction on Use of Hazardous Substance in Electronic Equipment) directive 2002/95/EU, to be your trusted green partner and to protect our environment.

RoHS restricts the use of Lead (Pb) < 0.1% or 1,000ppm, Mercury (Hg) < 0.1% or 1,000ppm, Cadmium (Cd) < 0.01% or 100ppm, Hexavalent Chromium (Cr6+) < 0.1% or 1,000ppm, Polybrominated biphenyls (PBB) < 0.1% or 1,000ppm, and Polybrominated diphenyl Ethers (PBDE) < 0.1% or 1,000ppm.

In order to meet the RoHS compliant directives, NEXCOM has established an engineering and manufacturing task force in to implement the introduction of green products. The task force will ensure that we follow the standard NEXCOM development procedure and that all the new RoHS components and new manufacturing processes maintain the highest industry quality levels for which NEXCOM are renowned.

The model selection criteria will be based on market demand. Vendors and suppliers will ensure that all designed components will be RoHS compliant.

How to recognize NEXCOM RoHS Products?

For existing products where there are non-RoHS and RoHS versions, the suffix "(LF)" will be added to the compliant product name.

All new product models launched after January 2006 will be RoHS compliant. They will use the usual NEXCOM naming convention.

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Warranty and RMA

NEXCOM Warranty Period

NEXCOM manufactures products that are new or equivalent to new in accordance with industry standard. NEXCOM warrants that products will be free from defect in material and workmanship for 2 years, beginning on the date of invoice by NEXCOM. HCP series products (Blade Server) which are manufactured by NEXCOM are covered by a three year warranty period.

NEXCOM Return Merchandise Authorization (RMA)

- Customers shall enclose the "NEXCOM RMA Service Form" with the returned packages.
- Customers must collect all the information about the problems encountered and note anything abnormal or, print out any on-screen messages, and describe the problems on the "NEXCOM RMA Service Form" for the RMA number apply process.
- Customers can send back the faulty products with or without accessories (manuals, cable, etc.) and any components from the card, such as CPU and RAM. If the components were suspected as part of the problems, please note clearly which components are included. Otherwise, NEXCOM is not responsible for the devices/parts.
- Customers are responsible for the safe packaging of defective products, making sure it is durable enough to be resistant against further damage and deterioration during transportation. In case of damages occurred during transportation, the repair is treated as "Out of Warranty."
- Any products returned by NEXCOM to other locations besides the customers' site will bear an extra charge and will be billed to the customer.

Repair Service Charges for Out-of-Warranty Products

NEXCOM will charge for out-of-warranty products in two categories, one is basic diagnostic fee and another is component (product) fee.

Repair Service Charges for Out-of-Warranty Products

NEXCOM will charge for out-of-warranty products in two categories, one is basic diagnostic fee and another is component (product) fee.

System Level

- Component fee: NEXCOM will only charge for main components such as SMD chip, BGA chip, etc. Passive components will be repaired for free, ex: resistor, capacitor.
- Items will be replaced with NEXCOM products if the original one cannot be repaired. Ex: motherboard, power supply, etc.
- Replace with 3rd party products if needed.
- If RMA goods can not be repaired, NEXCOM will return it to the customer without any charge.

Board Level

- Component fee: NEXCOM will only charge for main components, such as SMD chip, BGA chip, etc. Passive components will be repaired for free, ex: resistors, capacitors.
- If RMA goods can not be repaired, NEXCOM will return it to the customer without any charge.

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Warnings

Read and adhere to all warnings, cautions, and notices in this guide and the documentation supplied with the chassis, power supply, and accessory modules. If the instructions for the chassis and power supply are inconsistent with these instructions or the instructions for accessory modules, contact the supplier to find out how you can ensure that your computer meets safety and regulatory requirements.

Cautions

Electrostatic discharge (ESD) can damage system components. Do the described procedures only at an ESD workstation. If no such station is available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the computer chassis.

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Safety Information

Before installing and using the device, note the following precautions:

- Read all instructions carefully.
- Do not place the unit on an unstable surface, cart, or stand.
- Follow all warnings and cautions in this manual.
- When replacing parts, ensure that your service technician uses parts specified by the manufacturer.
- Avoid using the system near water, in direct sunlight, or near a heating device.
- The load of the system unit does not solely rely for support from the rackmounts located on the sides. Firm support from the bottom is highly necessary in order to provide balance stability.
- The computer is provided with a battery-powered real-time clock circuit. There is a danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

Installation Recommendations

Ensure you have a stable, clean working environment. Dust and dirt can get into components and cause a malfunction. Use containers to keep small components separated.

Adequate lighting and proper tools can prevent you from accidentally damaging the internal components. Most of the procedures that follow require only a few simple tools, including the following:

- A Philips screwdriver
- A flat-tipped screwdriver
- A grounding strap
- An anti-static pad

Using your fingers can disconnect most of the connections. It is recommended that you do not use needle-nose pliers to disconnect connections as these can damage the soft metal or plastic parts of the connectors.

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Safety Precautions

1. Read these safety instructions carefully.

2. Keep this User Manual for later reference.

3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.

4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.

5. Keep this equipment away from humidity.

6. Put this equipment on a stable surface during installation. Dropping it or letting it fall may cause damage.

7. The openings on the enclosure are for air convection to protect the equipment from overheating. DO NOT COVER THE OPENINGS.

8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.

9. Place the power cord in a way so that people will not step on it. Do not place anything on top of the power cord. Use a power cord that has been approved for use with the product and that it matches the voltage and current marked on the product's electrical range label. The voltage and current rating of the cord must be greater than the voltage and current rating marked on the product.

10. All cautions and warnings on the equipment should be noted.

11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.

12. Never pour any liquid into an opening. This may cause fire or electrical shock.

13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.

14. If one of the following situations arises, get the equipment checked by service personnel:
    a. The power cord or plug is damaged.
    b. Liquid has penetrated into the equipment.
    c. The equipment has been exposed to moisture.
    d. The equipment does not work well, or you cannot get it to work according to the user's manual.
    e. The equipment has been dropped and damaged.
    f. The equipment has obvious signs of breakage.

15. Do not place heavy objects on the equipment.

16. The unit uses a three-wire ground cable which is equipped with a third pin to ground the unit and prevent electric shock. Do not defeat the purpose of this pin. If your outlet does not support this kind of plug, contact your electrician to replace your obsolete outlet.

17. CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER. DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

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Technical Support and Assistance

1. For the most updated information of NEXCOM products, visit NEXCOM's website at www.nexcom.com.

2. For technical issues that require contacting our technical support team or sales representative, please have the following information ready before calling:
   - Product name and serial number
   - Detailed information of the peripheral devices
   - Detailed information of the installed software (operating system, version, application software, etc.)
   - A complete description of the problem
   - The exact wordings of the error messages

Warning!

1. Handling the unit: carry the unit with both hands and handle it with care.

2. Maintenance: to keep the unit clean, use only approved cleaning products or clean with a dry cloth.

3. CompactFlash: Turn off the unit's power before inserting or removing a CompactFlash storage card.

Conventions Used in this Manual

Warning:
Information about certain situations, which if not observed, can cause personal injury. This will prevent injury to yourself when performing a task.

Caution:
Information to avoid damaging components or losing data.

Note:
Provides additional information to complete a task easily.

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Package Contents

Before continuing, verify that the NSA 3150 package that you received is complete. Your package should have all the items listed in the following table.

Item	Part Number	Name	Description	Qty
1	19S00315000X0	NSA3150 ASSY		1
2	50311F0102X00	(H)Round Head Screw Long FEI:P6#32Tx 1/4/SW7*0.8	W/Spring+Flat Washer P6#32Tx 1/4/SW7x0.8 NI	4
3	5044440031X00	Rubber Foot Kang Yang:RF20-5-4P	19.8x18x5.0mm	4
4	5060900301X00	NSA 5130 Ear Sets VER:A CHYUAN-JYH	79.5x43.5x26mm AL PANTONE 295U	1
5	5041110028X00	AL-Handle For UTM625 VER:A TENG-JYE	105x64x10.5mm Color:Sophos White	1
6	6012200052X00	PE Zipper Bag #8	170x240mm,W/China RoHS Symbol	1
7	6012200053X00	PE Zipper Bag #3	100x70mm,W/China RoHS Symbol	1
8	6023309081X00	Cable EDI:232091081804-RS	COM Port. DB9 Female To RJ45 8P8C L:1800mm	1
9	6029900037X00	Dow Corning 340 Silcone Heat Sink Compound(3g)		1
10	60233AT133X00	SATA Cable ST:MD-6102042	SATA 7P 180D(Lock) TO 7P 90D(Lock) L=135mm	1
11	6014401871X00	NSA 3150 Membrane W/O LCM & Module VER:A GREATWOOD	42x427.8x1mm	1
12	602DCD0776X00	(N)NSA 3150 CD Driver VER:A	JCL	1
13	50311F0100X00	(H)Round Head Screw W/Spring+Flat Washer Long FEI:P3x6L	P3x6 iso/SW6x0.5 NI	1

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Ordering Information

The following below provides ordering information for NSA 3150.

Barebone

NSA 3150 (P/N: 10S00315000X0)

Support 4th generation Intel® Core™ processors, 2 DDR3 memory slots, 8PCIe GbE LAN ports, USB ports, VGA port, w/o LCM

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Chapter 1: Product Introduction

Overview

Key Features

- 1U rackmount network platform
- 4th generation Intel® Core™ processors
- Support two DDR3 1333/1600 memory, up to 32GB
- Support one PCIe x8 expansion
- Internal one 3.5" HDD bay/two 2.5" HDD bay (Optional)

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Hardware Specifications

Main Board

- NSB 3150
- Support 4th generation Intel® Core™ processors
- Intel® H81

Main Memory

- 2x 240-pin DDR3 1333/1600MHz DIMM sockets, up to 16GB non-ECC SDRAM

LAN Features

- LAN chip: Intel® I211
- Support 10/100/1000 link speed
- LAN bypass: 4 pairs

Expansion

- 1x PCIe x8 slot (optional)
- 1x LAN module

I/O Interface

- Power status/HDD status/LAN status/Bypass status LEDs
- 2x USB 2.0 ports
- 1x RJ45 type console port
- 8x copper LAN ports
- 1x LAN module

I/O Interface-Rear

- 1x expansion slot (optional)
- 2x USB 2.0 ports
- 1x VGA port

Devices

- 1x internal 3.5" HDD bay/ 2x 2.5" HDD bay (optional)
- 1x SATA-DOM device space

Power Input

- 250W ATX power supply

Chassis Dimensions

- Chassis dimension: 430mm x 450mm x 44mm
- Carton dimension: TBD

Weight

- Without packing: 8Kg
- With packing: 12Kg

Certifications

- CE approval
- FCC Class A
- UL

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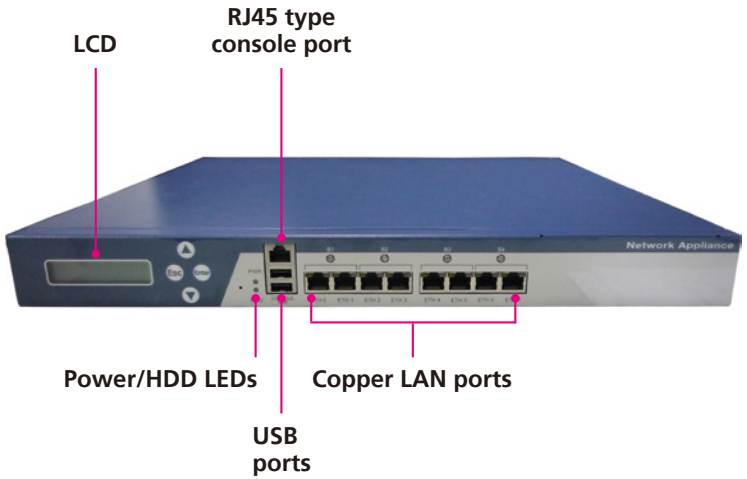
Knowing Your NSA 3150

Front Panel



LCD
2x16 characters LCD module, PIO interface.

Power LED
Indicates the power status of the system.

HDD LED
Indicates the status of the hard drive.

RJ45 Type Console Port
Used to connect RJ45 type console port.

USB Ports
Used to connect USB 2.0/1.1 devices.

Copper LAN Ports
Used to connect LAN network devices.

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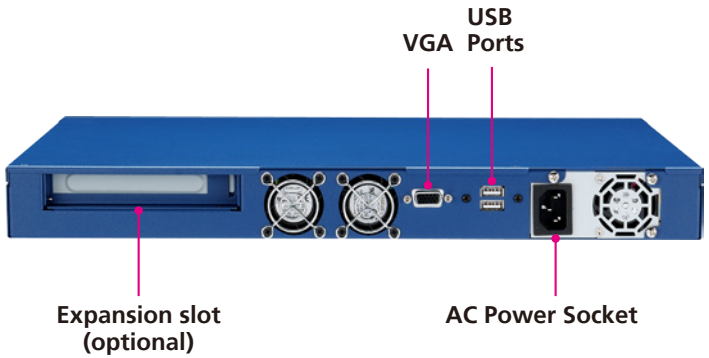
Rear Panel



Expansion Slot
Used to install a PCI Express x8 card.

VGA
Used to connect an analog VGA monitor.

USB Ports
Used to connect USB 2.0/1.1 devices.

AC Power Socket
Plug an AC power cord here before turning on the system.

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Chapter 2: Jumpers and Connectors

This chapter describes how to set the jumpers and connectors on the NSA 3150 motherboard.

Before You Begin

- Ensure you have a stable, clean working environment. Dust and dirt can get into components and cause a malfunction. Use containers to keep small components separated.
- Adequate lighting and proper tools can prevent you from accidentally damaging the internal components. Most of the procedures that follow require only a few simple tools, including the following:
  - A Philips screwdriver
  - A flat-tipped screwdriver
  - A set of jewelers screwdrivers
  - A grounding strap
  - An anti-static pad
- Using your fingers can disconnect most of the connections. It is recommended that you do not use needle-nosed pliers to disconnect connections as these can damage the soft metal or plastic parts of the connectors.
- Before working on internal components, make sure that the power is off. Ground yourself before touching any internal components, by touching a metal object. Static electricity can damage many of the electronic components. Humid environments tend to have less static electricity than dry environments. A grounding strap is warranted whenever danger of static electricity exists.

Precautions

Computer components and electronic circuit boards can be damaged by discharges of static electricity. Working on computers that are still connected to a power supply can be extremely dangerous.

Follow the guidelines below to avoid damage to your computer or yourself:

- Always disconnect the unit from the power outlet whenever you are working inside the case.
- If possible, wear a grounded wrist strap when you are working inside the computer case. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.
- Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Don't flex or stress the circuit board.
- Leave all components inside the static-proof packaging that they shipped with until they are ready for installation.
- Use correct screws and do not over tighten screws.

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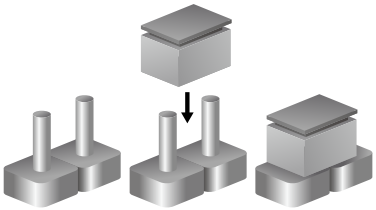
Jumper Settings

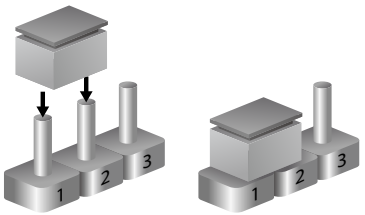
A jumper is the simplest kind of electric switch. It consists of two metal pins and a cap. When setting the jumpers, ensure that the jumper caps are placed on the correct pins. When the jumper cap is placed on both pins, the jumper is short. If you remove the jumper cap, or place the jumper cap on just one pin, the jumper is open.

Refer to the illustrations below for examples of what the 2-pin and 3-pin jumpers look like when they are short (on) and open (off).

Two-Pin Jumpers: Open (Left) and Short (Right)



Three-Pin Jumpers: Pins 1 and 2 are Short



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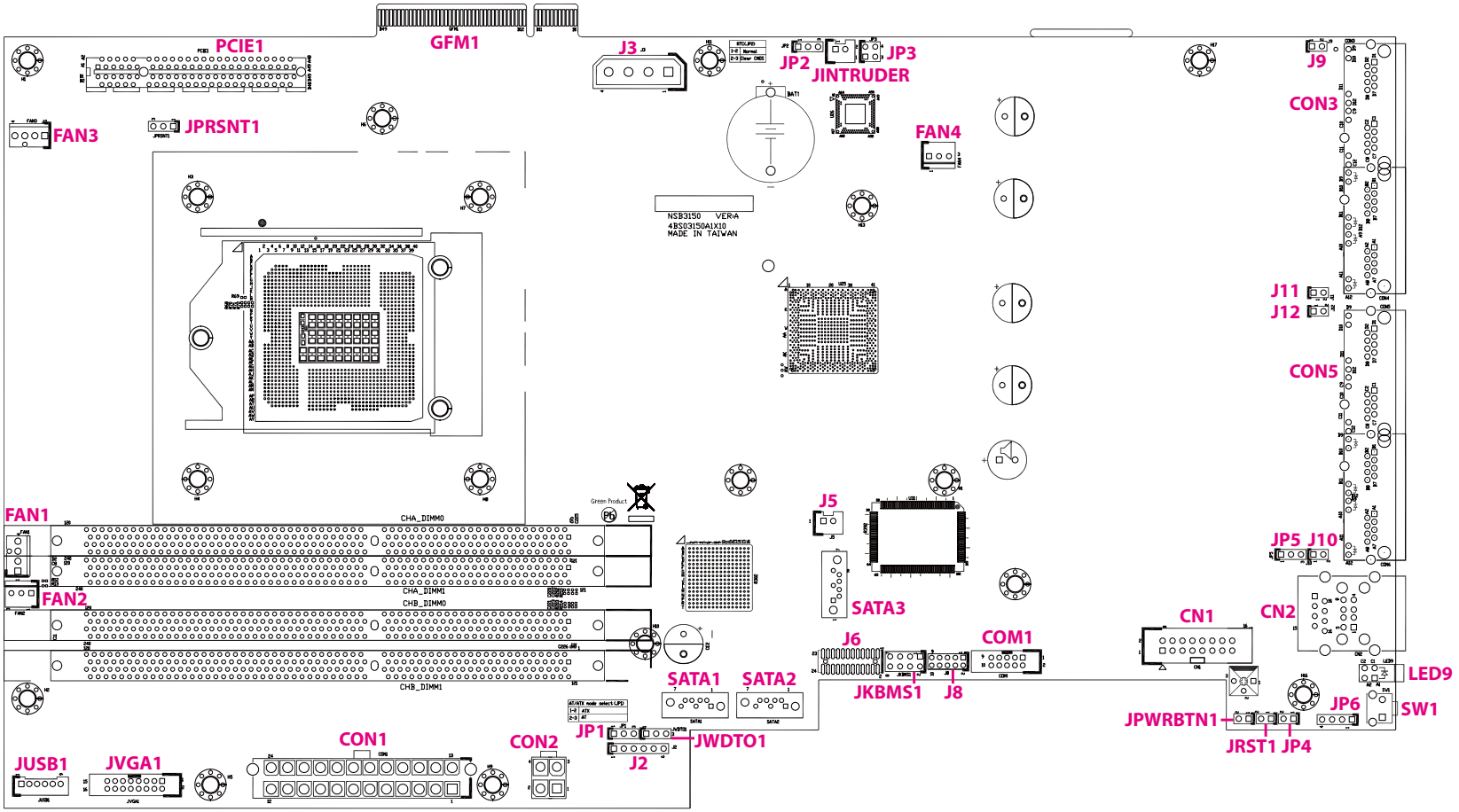
Locations of the Jumpers and Connectors

The figure below shows the location of the jumpers and connectors.



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Jumpers

RTC Clear

Connector type: 1x3 3-pin header, 2.54mm pitch
Connector location: JP2

Pin	Function
1-2	Normal
2-3	Clear CMOS

Pin	Definition
1	VCCRTC
2	RTC_RST#
3	GND

ATX/AT Select

Connector type: 1x3 3-pin header, 2.54mm pitch
Connector location: JP1

Pin	Function
1-2	ATX Mode
2-3	AT Mode

Pin	Definition
1	NC
2	AT_ATX_SELECT
3	GND

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Console Pin Header

Connector type: 1x3 3-pin header, 2.54mm pitch
Connector location: JP5

Pin	Function
1-2	RTS to CTS
2-3	Normal

Pin	Description
1	SP_RTS1_R
2	SP_CTS1_R
3	SP_CTS1_CON

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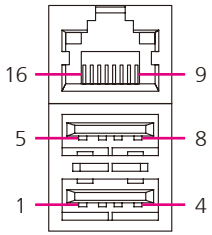
Connector Pin Definitions

External I/O Interfaces

RS232 Console Port and Dual USB 2.0 Ports

Connector type: RJ45 port with LEDs
Dual USB 2.0 ports, Type A
Connector location: CN2



LAN

Pin	Definition	Pin	Definition
9	SP_RTS1_R	10	SP_DTR1_R
11	SP_TXD1_R	12	GND
13	SP_DCD1_R	14	SP_RXD1_R
15	SP_DSR1_R	16	SP_CTS1_CON

USB

Pin	Definition	Pin	Definition
1	5VDUAL	5	5VDUAL
2	USB2-	6	USB3-
3	USB2+	7	USB3+
4	GND	8	GND

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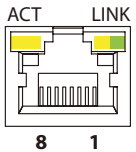
LAN Ports

Connector type: RJ45 with LEDs
Connector location: CON5 and CON3



Act	Status
Flashing Yellow	Data activity
Off	No activity

Link	Status
Steady Green	1G network link
Steady Yellow	100Mbps network link
Off	No link

CON5

Pin	Definition	Pin	Definition
A1	LAN1_TXP0_CON	A2	LAN1_TXN0_CON
A3	LAN1_TXP1_CON	A4	LAN1_TXP2_CON
A5	LAN1_TXN2_CON	A6	LAN1_TXN1_CON
A7	LAN1_TXP3_CON	A8	LAN1_TXN3_CON
A9	LAN1_LED_LINK1G#	A10	LAN1_LED_LINK100#
A11	LAN1_LED_ACT#	A12	LAN1_ACTPW
B1	LAN2_TXP0_CON	B2	LAN2_TXN0_CON
B3	LAN2_TXP1_CON	B4	LAN2_TXP2_CON
B5	LAN2_TXN2_CON	B6	LAN2_TXN1_CON
B7	LAN2_TXP3_CON	B8	LAN2_TXN3_CON
B9	LAN2_LED_LINK1G#	B10	LAN2_LED_LINK100#
B11	LAN2_LED_ACT#	B12	LAN2_ACTPW

CON5

Pin	Definition	Pin	Definition
C1	LAN3_TXP0_CON	C2	LAN3_TXN0_CON
C3	LAN3_TXP1_CON	C4	LAN3_TXP2_CON
C5	LAN3_TXN2_CON	C6	LAN3_TXN1_CON
C7	LAN3_TXP3_CON	C8	LAN3_TXN3_CON
C9	LAN3_LED_LINK1G#	C10	LAN3_LED_LINK100#
C11	LAN3_LED_ACT#	C12	LAN3_ACTPW
D1	LAN4_TXP0_CON	D2	LAN4_TXN0_CON
D3	LAN4_TXP1_CON	D4	LAN4_TXP2_CON
D5	LAN4_TXN2_CON	D6	LAN4_TXN1_CON
D7	LAN4_TXP3_CON	D8	LAN4_TXN3_CON
D9	LAN4_LED_LINK1G#	D10	LAN4_LED_LINK100#
D11	LAN4_LED_ACT#	D12	LAN4_ACTPW

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CON3

Pin	Definition	Pin	Definition
A1	LAN5_TXP0_CON	A2	LAN5_TXN0_CON
A3	LAN5_TXP1_CON	A4	LAN5_TXP2_CON
A5	LAN5_TXN2_CON	A6	LAN5_TXN1_CON
A7	LAN5_TXP3_CON	A8	LAN5_TXN3_CON
A9	LAN5_LED_LINK1G#	A10	LAN5_LED_LINK100#
A11	LAN5_LED_ACT#	A12	LAN5_ACTPW
B1	LAN6_TXP0_CON	B2	LAN6_TXN0_CON
B3	LAN6_TXP1_CON	B4	LAN6_TXP2_CON
B5	LAN6_TXN2_CON	B6	LAN6_TXN1_CON
B7	LAN6_TXP3_CON	B8	LAN6_TXN3_CON
B9	LAN6_LED_LINK1G#	B10	LAN6_LED_LINK100#
B11	LAN6_LED_ACT#	B12	LAN6_ACTPW

CON3

Pin	Definition	Pin	Definition
C1	LAN7_TXP0_CON	C2	LAN7_TXN0_CON
C3	LAN7_TXP1_CON	C4	LAN7_TXP2_CON
C5	LAN7_TXN2_CON	C6	LAN7_TXN1_CON
C7	LAN7_TXP3_CON	C8	LAN7_TXN3_CON
C9	LAN7_LED_LINK1G#	C10	LAN7_LED_LINK100#
C11	LAN7_LED_ACT#	C12	LAN7_ACTPW
D1	LAN8_TXP0_CON	D2	LAN8_TXN0_CON
D3	LAN8_TXP1_CON	D4	LAN8_TXP2_CON
D5	LAN8_TXN2_CON	D6	LAN8_TXN1_CON
D7	LAN8_TXP3_CON	D8	LAN8_TXN3_CON
D9	LAN8_LED_LINK1G#	D10	LAN8_LED_LINK100#
D11	LAN8_LED_ACT#	D12	LAN8_ACTPW

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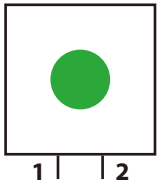
Reset Button

Connector location: SW1



Pin	Definition
1	GND
2	SW_BTN_IN

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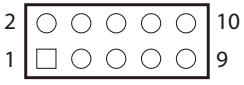
Connector Pin Definitions

Internal Connectors

Digital IO (4 Input/4 Output)

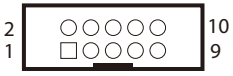
Connector type: 2x5 10-pin header, 2.0mm pitch
Connector location: J8



Pin	Definition	Pin	Definition
1	VCC5	2	GND
3	SIO_GP32	4	SIO_GP06
5	SIO_GP03	6	SIO_GP07
7	SIO_GP04	8	SIO_GP76
9	SIO_GP05	10	SIO_GP77

COM 2 Box Header Connector

Connector type: 2x5 10-pin header, 2.0mm pitch
Connector location: COM1



Pin	Definition	Pin	Definition
1	SP_DCD2	2	SP_RXD2
3	SP_TXD2	4	SP_DTR2
5	GND	6	SP_DSR2
7	SP_RTS2	8	SP_CTS2
9	SP_RI2	10	GND

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USB2 JST Header Connector

Connector type: 1x6 6-pin header, 2.0mm pitch
Connector location: JUSB1

Pin	Definition	Pin	Definition
1	5VDUAL	2	USB0-
3	USB0+	4	USB1-
5	USB1+	6	GND

HW Reset Pin Header

Connector type: 1x2 2-pin header, 2.54mm pitch
Connector location: JRST1

Pin	Definition
1	PCH_SYS_RESET_N_R
2	GND

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Power Button Pin Header

Connector type: 1x2 2-pin header, 2.54mm pitch
Connector location: JPWRBTN1

Pin	Definition
1	GND
2	FP_PWRBTN_N

Bypass LED Pin Header

Connector type: 1x2 2-pin header, 2.54mm pitch
Connector location: J9, J10, J11 and J12

J9

Pin	Definition
1	VCC3
2	BYPASS_LED_S4

J11

Pin	Definition
1	VCC3
2	BYPASS_LED_S3

J12

Pin	Definition
1	VCC3
2	BYPASS_LED_S2

J12

Pin	Definition
1	VCC3
2	BYPASS_LED_S1

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GAL Programming Connector

Connector type: 1x6 6-pin header, 2.54mm pitch
Connector location: J2

Pin	Definition	Pin	Definition
1	3VSB	2	GND
3	GAL_TCK	4	GAL_TDO
5	GAL_TDI	6	GAL_TMS

Power Connector

Connector type: 1x4 4-pin header, 5.08mm pitch
Connector location: J3

Pin	Definition	Pin	Definition
1	VCC12	2	GND
3	GND	4	VCC5

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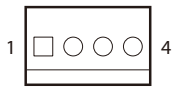
System Fan Connectors (4-Pin)

Connector type: 1x4 4-pin Wafer, 2.54mm pitch
Connector location: FAN1 and FAN3



Pin	Definition
1	GND
2	VCC12
3	Sense
4	FANPWM

System Fan Connectors (3-Pin)

Connector type: 1x3 3-pin Wafer, 2.54mm pitch
Connector location: FAN2 and FAN4

Pin	Definition
1	GND
2	VCC12
3	Sense

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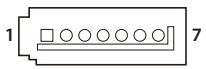
SATA Connectors

Connector type: Standard Serial ATA, 1.27mm pitch
Connector location: SATA1, SATA2 and SATA3



SATA1

Pin	Definition	Pin	Definition
1	GND	2	SATA_TX2P
3	SATA_TX2N	4	GND
5	SATA_RX2N	6	SATA_RX2P
7	GND		

SATA2

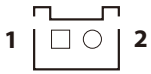
Pin	Definition	Pin	Definition
1	GND	2	SATA_TX0P
3	SATA_TX0N	4	GND
5	SATA_RX0N	6	SATA_RX0P
7	GND		

SATA3

Pin	Definition	Pin	Definition
1	GND	2	SATA_TX1P
3	SATA_TX1N	4	GND
5	SATA_RX1N	6	SATA_RX1P
7	GND		

SATA DOM Power Port

Connector type: 1x2 2-pin header, 2.5mm pitch
Connector location: J5



Pin	Definition
1	VCC5
2	GND

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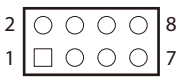
Keyboard/Mouse Connector

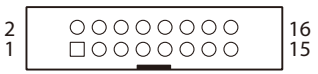
Connector type: 2x4 8-pin header, 2.54mm pitch
Connector location: JKBMS1



Pin	Definition	Pin	Definition
1	VCC5	2	VCC5
3	KDAT	4	MDAT
5	KCLK	6	MCLK
7	GND	8	GND

VGA Connector

Connector type: 2x8 16-pin header, 2.0mm pitch
Connector location: JVGA1



Pin	Definition	Pin	Definition
1	RED_VGA	2	GREEN_VGA
3	BLUE_VGA	4	NC
5	GND	6	GND
7	GND	8	GND
9	VGA_+5V	10	GND
11	NC	12	DDC_DATA_VGA
13	HSYNC_VGA	14	VSYNC_VGA
15	DDC_CLK_VGA	16	NC

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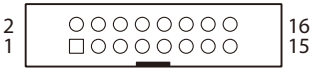
Parallel Interface for LCM Module

Connector type: 2x8 16-pin header, 2.54mm pitch
Connector location: CN1



Pin	Definition	Pin	Definition
1	VCC5	2	GND
3	LPT_SLIN#R	4	LPT_RES
5	LPT_AFD#R	6	LPT_INIT#R
7	LPT_PDR1	8	LPT_PDR0
9	LPT_PDR3	10	LPT_PDR2
11	LPT_PDR5	12	LPT_PDR4
13	LPT_PDR7	14	LPT_PDR6
15	LPT_PW	16	VCC5

Keypad Pin Header

Connector type: 1x4 4-pin header, 2.54mm pitch
Connector location: JP6

Pin	Definition	Pin	Definition
1	KEY_PIN1	2	KEY_PIN2
3	KEY_PIN3	4	KEY_PIN4

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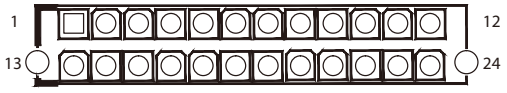
Power Connector

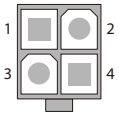
Connector type: 2x12 24-pin header, 2.54mm pitch
Connector location: CON1



Pin	Definition	Pin	Definition
1	VCC3	2	VCC3
3	GND	4	VCC5
5	GND	6	VCC5
7	GND	8	ATXPWROK
9	5VSB	10	VCC12
11	VCC12	12	VCC3
13	VCC3	14	NVCC12
15	GND	16	SIO_PSON_N
17	GND	18	GND
19	GND	20	GND
21	VCC5	22	VCC5
23	VCC5	24	GND

Power Connector

Connector type: 2x2 4-pin header, 3.5mm pitch
Connector location: CON2



Pin	Definition	Pin	Definition
1	GND	2	GND
3	VCC12_CPU	4	VCC12_CPU

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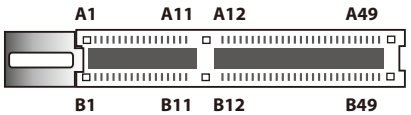
PCIe x8 Slot

Connector type: PCIe x8 Slot
Connector location: PCIE1



Pin	Definition	Pin	Definition
A1	PRSNT1	B1	VCC12
A2	VCC12	B2	VCC12
A3	VCC12	B3	VCC12
A4	GND	B4	GND
A5	NC	B5	SLOT_SMC
A6	NC	B6	SLOT_SMD
A7	NC	B7	GND
A8	NC	B8	VCC3
A9	VCC3	B9	NC
A10	VCC3	B10	3VSB
A11	RST_X8_SLOT_N	B11	PCIE_WAKE_L
A12	GND	B12	NC
A13	CK_SLOT2_DP	B13	GND
A14	CK_SLOT2_DN	B14	PEG_STXP0
A15	GND	B15	PEG_STXN0
A16	PEG_SRXP0	B16	GND
A17	PEG_SRXN0	B17	PCIe_PRSNT
A18	GND	B18	GND
A19	NC	B19	PEG_STXP1
A20	GND	B20	PEG_STXN1
A21	PEG_SRXP1	B21	GND
A22	PEG_SRXN1	B22	GND
A23	GND	B23	PEG_STXP2
A24	GND	B24	PEG_STXN2
A25	PEG_SRXP2	B25	GND
A26	PEG_SRXN2	B26	GND
A27	GND	B27	PEG_STXP3
A28	GND	B28	PEG_STXN3
A29	PEG_SRXP3	B29	GND
A30	PEG_SRXN3	B30	NC
A31	GND	B31	PCIe_PRSNT
A32	NC	B32	GND
A33	NC	B33	PEG_STXP4
A34	GND	B34	PEG_STXN4
A35	PEG_SRXP4	B35	GND
A36	PEG_SRXN4	B36	GND
A37	GND	B37	PEG_STXP5
A38	GND	B38	PEG_STXN5
A39	PEG_SRXP5	B39	GND
A40	PEG_SRXN5	B40	GND
A41	GND	B41	PEG_STXP6
A42	GND	B42	PEG_STXN6
A43	PEG_SRXP6	B43	GND
A44	PEG_SRXN6	B44	GND
A45	GND	B45	PEG_STXP7
A46	GND	B46	PEG_STXN7
A47	PEG_SRXP7	B47	GND
A48	PEG_SRXN7	B48	PCIe_PRSNT
A49	GND	B49	GND

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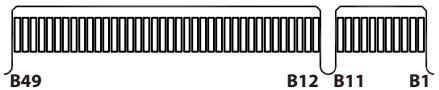
PCIe Golden Finger (For LAN Module)

Connector location: GFM1



Pin	Definition	Pin	Definition
A1	RST_X8_GF_N	B1	PCIE3_SEL1
A2	LPC_AD0	B2	PCIE3_SEL2
A3	LPC_AD1	B3	PCIE3_SEL3
A4	LPC_AD2	B4	VCC3_3
A5	LPC_AD3	B5	SMB_CLK_MAIN
A6	LPC_FRAME_N	B6	SMB_DATA_MAIN
A7	VCC3_3	B7	VCC3_3
A8	RST_X8_GF_N	B8	VCC3_3
A9	VCC3_3	B9	GF_SUSCLK
A10	VCC3_3	B10	VCC3_3
A11	ALL_PWRGD	B11	SMB_ALERT_N
A12	SYS_FAN	B12	USB_OC45#
A13	VCC3_3	B13	WAKE_N
A14	VCC3_3	B14	3VSB
A15	CK_SLOT1_DP	B15	3VSB
A16	CK_SLOT1_DN	B16	3VSB
A17	VCC3_3	B17	USB_4P
A18	CLK_GF_33M	B18	USB_4N
A19	VCC3_3	B19	VCC3_3
A20	AUX_TEMP	B20	VCC3_3
A21	CPU-	B21	VCC3_3

Pin	Definition	Pin	Definition
A22	ATX_PWROK_A1	B22	ATX_PWROK_A1
A23	ATX_PWROK_A1	B23	ATX_PWROK_A1
A24	GND	B24	GND
A25	PEG_TXP0	B25	PEG_RXP0
A26	PEG_TXN0	B26	PEG_RXN0
A27	GND	B27	GND
A28	PEG_TXP1	B28	PEG_RXP1
A29	PEG_TXN1	B29	PEG_RXN1
A30	GND	B30	GND
A31	PEG_TXP2	B31	PEG_RXP2
A32	PEG_TXN2	B32	PEG_RXN2
A33	GND	B33	GND
A34	PEG_TXP3	B34	PEG_RXP3
A35	PEG_TXN3	B35	PEG_RXN3
A36	GND	B36	GND
A37	PEG_TXP4	B37	PEG_RXP4
A38	PEG_TXN4	B38	PEG_RXN4
A39	GND	B39	GND
A40	PEG_TXP5	B40	PEG_RXP5
A41	PEG_TXN5	B41	PEG_RXN5
A42	GND	B42	GND
A43	PEG_TXP6	B43	PEG_RXP6
A44	PEG_TXN6	B44	PEG_RXN6
A45	GND	B45	GND
A46	PEG_TXP7	B46	PEG_RXP7
A47	PEG_TXN7	B47	PEG_RXN7
A48	GND	B48	GND
A49	GND	B49	GND

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Chapter 3: System Setup

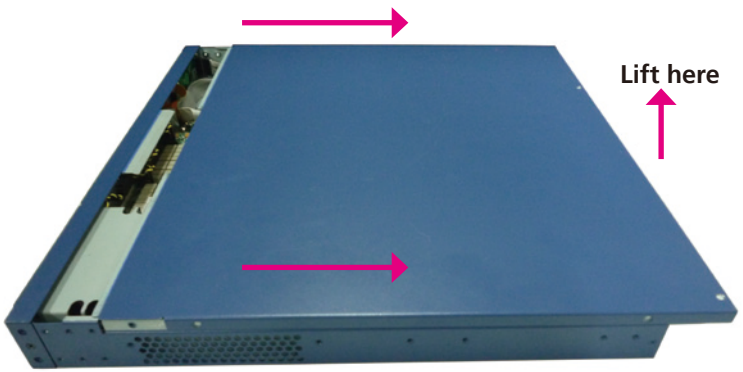
Removing the Chassis Cover

Prior to removing the chassis cover, make sure the unit's power is off and disconnected from the power sources to prevent electric shock or system damage.

Screws on the side

1. Remove the screws on the chassis cover then put them in a safe place for later use.

2. Gently slide the cover outwards, then lift up the cover to remove it.



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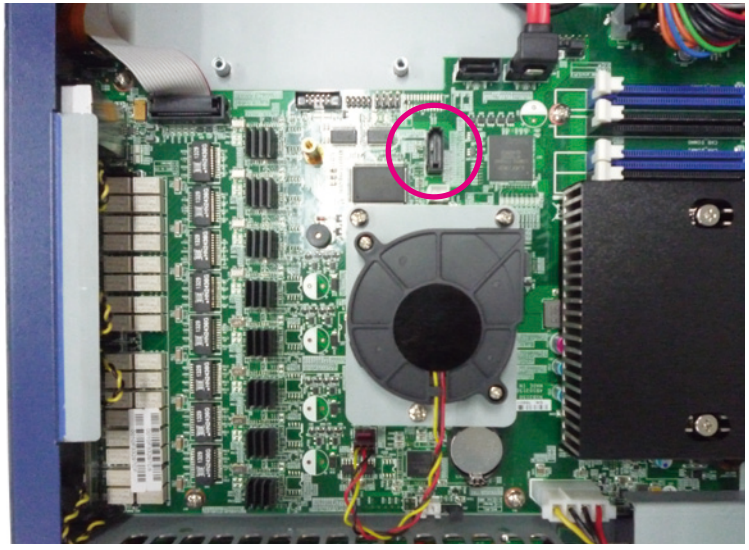
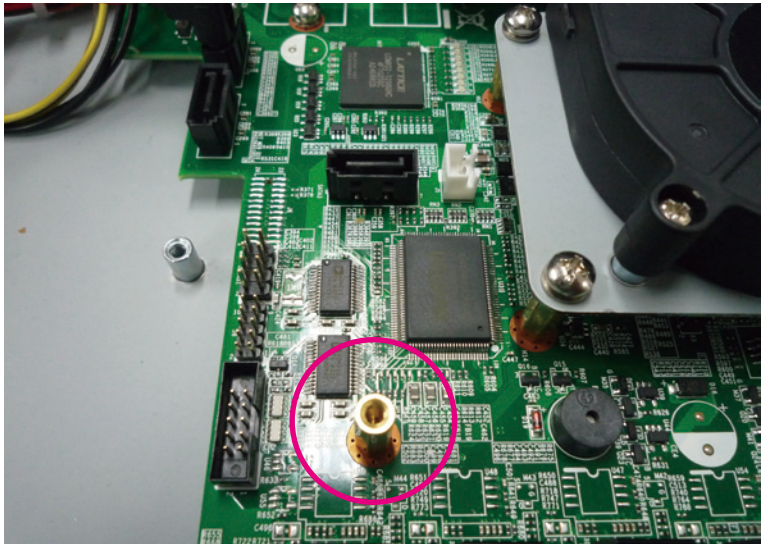
Installing a SATA DOM

1. Locate the SATA DOM connector on the board.



2. Fasten a copper post on the mounting hole.



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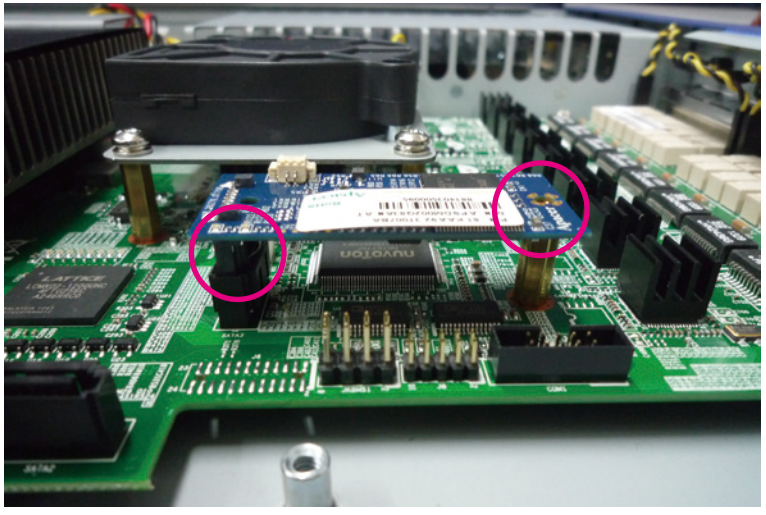
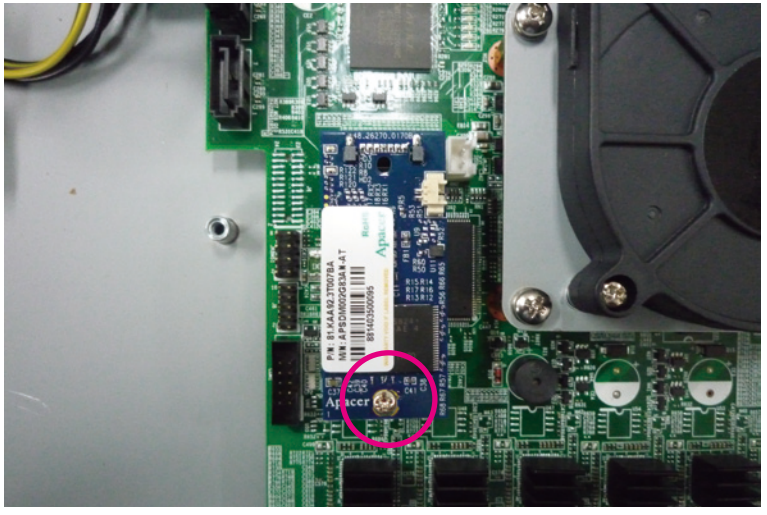
3. Install the SATA DOM to the connector with the mounting hole aligned to the copper post.



4. Fasten a screw on top of the copper post.



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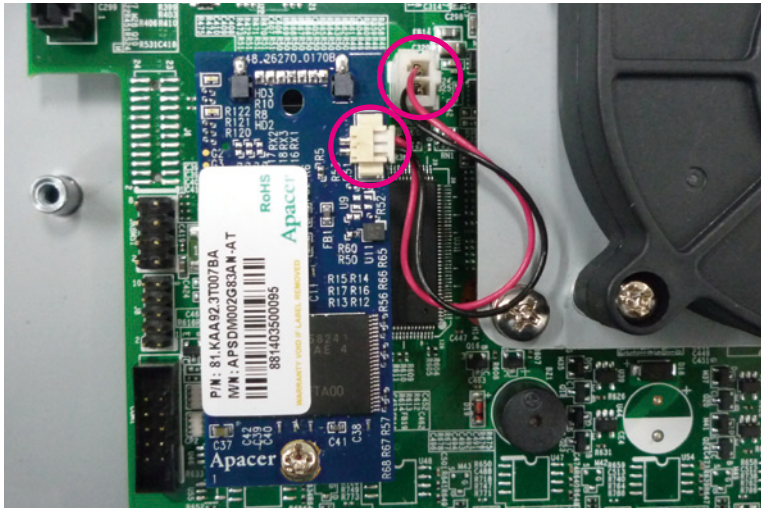
5. Connect the power cable to the power connector on the board.



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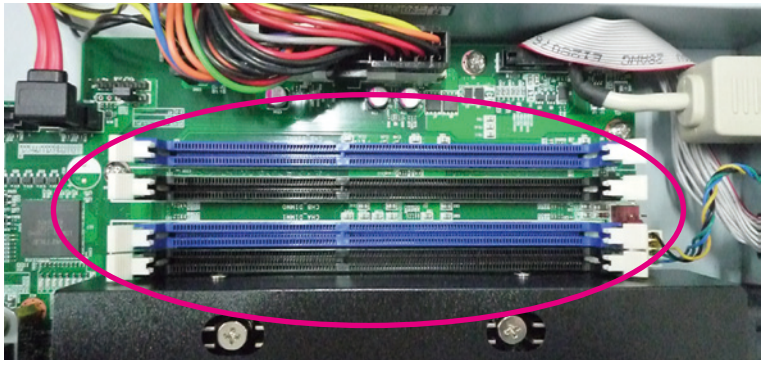
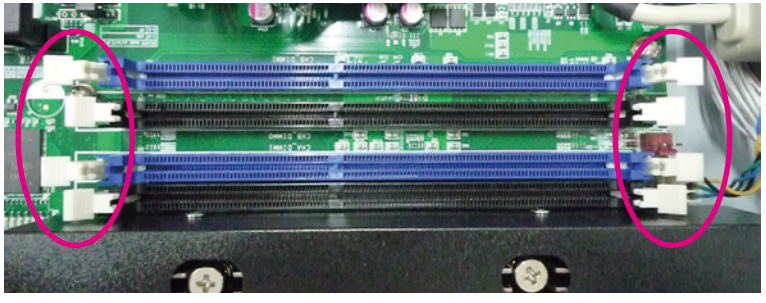
Installing DIMM Memory Modules

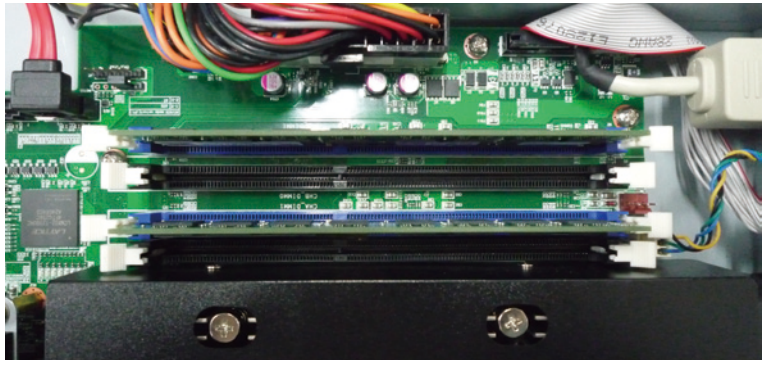
1. Locate the DIMM sockets on the board.



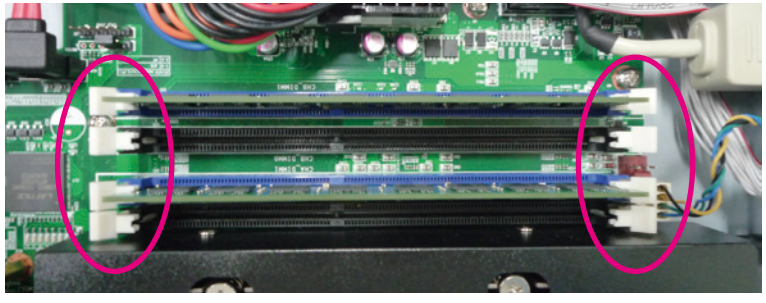
2. Release the locks on the DIMM sockets.



3. Insert the module into the socket at an 90 degree angle. Apply firm even pressure to each end of the module until it slips into the socket.



4. While pushing the DIMM into the position, the lock will close automatically.



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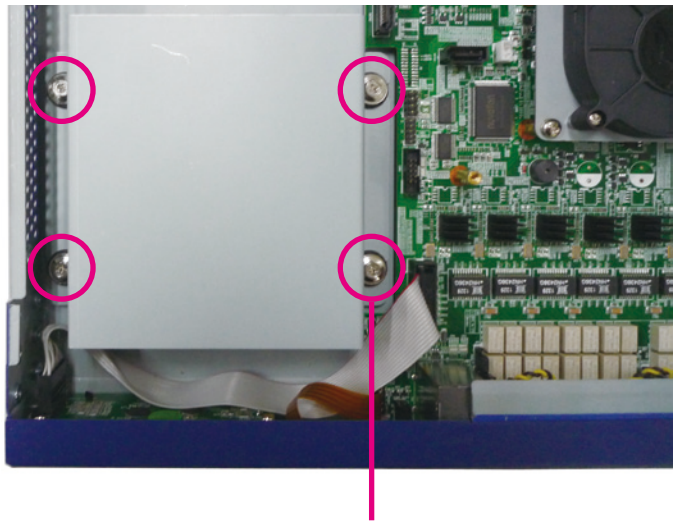
Installing a 3.5" SATA Hard Drive

Please correctly follow the below instructions and noted items to avoid making unnecessary damages.

1. Remove the mounting screws that secure the drive bay to the chassis.



Mounting screw

2. Place the SATA hard drive into the drive bay with the SATA connector facing outwards.

SATA data and power connector

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3. Align the mounting holes that are on the sides of the SATA drive with the mounting holes on the drive bay. Use the provided mounting screws to secure the SATA drive in place.

4. Repeat step 3 for securing the screws on the other side of the HDD tray.

5. Place the drive into the chassis with the connector side facing the board, and then use the provided mounting screws to secure the drive bay in place.

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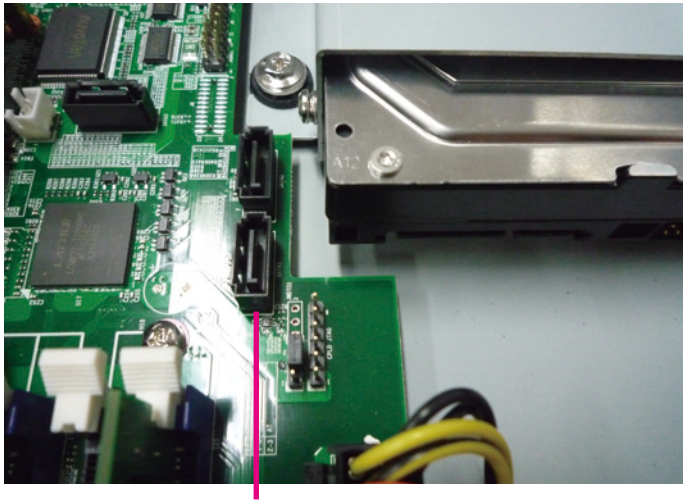
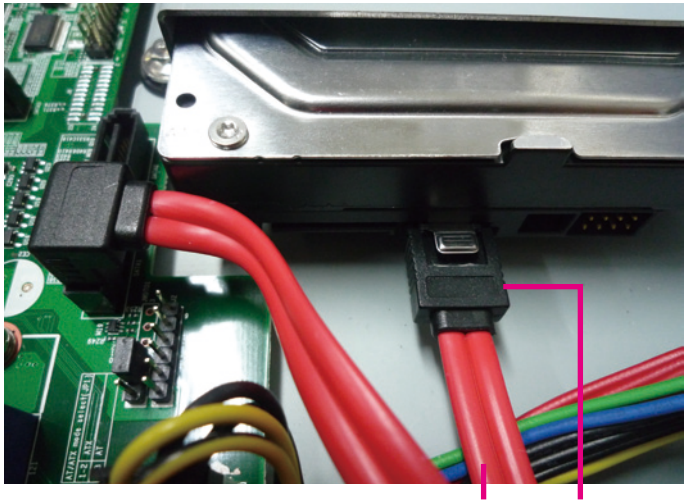
6. Locate the SATA data connector on the board.



SATA data connector

7. Plug the SATA data cable onto the connector, then plug the other end to the SATA data connector on the hard drive.



SATA data cable SATA data connector

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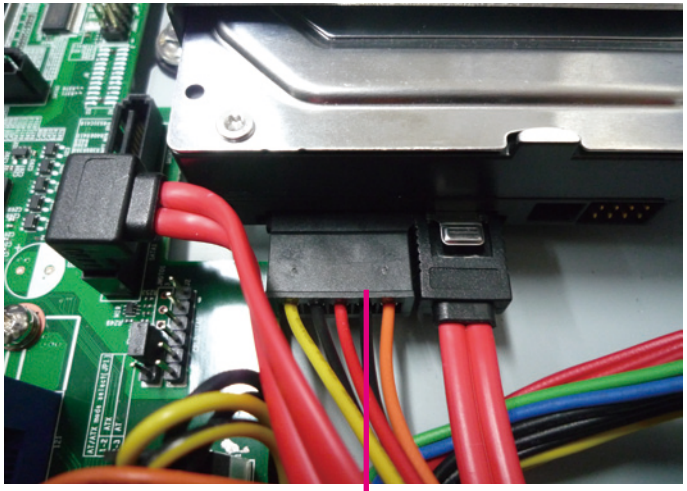
8. Plug the SATA power cable to the SATA power connector on the hard drive.



SATA power cable

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Rackmount Bracket Kit (Optional)

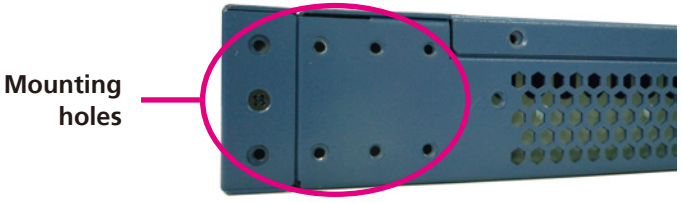
The rackmount bracket kit provides a convenient and economical way of installing the server into a rack cabinet.

Attaching the Long Rack Ears

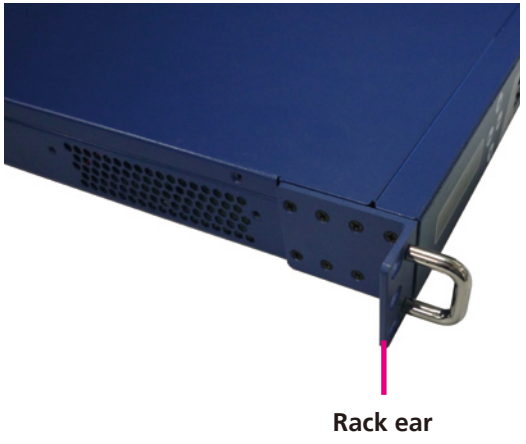
The long rack ears are used to support the server in a rack cabinet.

1. The rackmount bracket kit comes with a pair of long rack ears and 16 screws.

2. There are 8 mounting holes on each side of the front panel.



3. Align the mounting holes on the rack ear with the mounting holes on the front panel. Give special attention to the orientation of the rack ear. Secure the rack ear with mounting screws.



4. Repeat step 3 to secure the other rack ear.

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Notes on Rackmount Rails

When installing the rackmount kit (optional), please pay attention to the following:

1. Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.

2. Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

3. Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

4. Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

5. Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).”

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Chapter 4: BIOS Setup

This chapter describes how to use the BIOS setup program for the NSA 3150. The BIOS screens provided in this chapter are for reference only and may change if the BIOS is updated in the future.

To check for the latest updates and revisions, visit the NEXCOM Web site at www.nexcom.com.tw.

About BIOS Setup

The BIOS (Basic Input and Output System) Setup program is a menu driven utility that enables you to make changes to the system configuration and tailor your system to suit your individual work needs. It is a ROM-based configuration utility that displays the system's configuration status and provides you with a tool to set system parameters.

These parameters are stored in non-volatile battery-backed-up CMOS RAM that saves this information even when the power is turned off. When the system is turned back on, the system is configured with the values found in CMOS.

With easy-to-use pull down menus, you can configure such items as:

- Hard drives, diskette drives, and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power management features

The settings made in the setup program affect how the computer performs. It is important, therefore, first to try to understand all the setup options, and second, to make settings appropriate for the way you use the computer.

When to Configure the BIOS

- This program should be executed under the following conditions:
- When changing the system configuration
- When a configuration error is detected by the system and you are prompted to make changes to the setup program
- When resetting the system clock
- When redefining the communication ports to prevent any conflicts
- When making changes to the Power Management configuration
- When changing the password or making other changes to the security setup

Normally, CMOS setup is needed when the system hardware is not consistent with the information contained in the CMOS RAM, whenever the CMOS RAM has lost power, or the system features need to be changed.

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Default Configuration

Most of the configuration settings are either predefined according to the Load Optimal Defaults settings which are stored in the BIOS or are automatically detected and configured without requiring any actions. There are a few settings that you may need to change depending on your system configuration.

Entering Setup

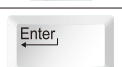
When the system is powered on, the BIOS will enter the Power-On Self Test (POST) routines. These routines perform various diagnostic checks; if an error is encountered, the error will be reported in one of two different ways:

- If the error occurs before the display device is initialized, a series of beeps will be transmitted.
- If the error occurs after the display device is initialized, the screen will display the error message.

Powering on the computer and immediately pressing

allows you to enter Setup.

Legends

Key	Function
	Moves the highlight left or right to select a menu.
	Moves the highlight up or down between sub-menu or fields.
	Exits the BIOS Setup Utility.
	Scrolls forward through the values or options of the highlighted field.
	Scrolls backward through the values or options of the highlighted field.
	Selects a field.
	Displays General Help.
	Load previous values.
	Load optimized default values.
	Saves and exits the Setup program.
	Press <Enter> to enter the highlighted sub-menu

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Scroll Bar

When a scroll bar appears to the right of the setup screen, it indicates that there are more available fields not shown on the screen. Use the up and down arrow keys to scroll through all the available fields.

Submenu

When "▶" appears on the left of a particular field, it indicates that a submenu which contains additional options are available for that field. To display the submenu, move the highlight to that field and press

.

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BIOS Setup Utility

Once you enter the AMI BIOS Setup Utility, the Main Menu will appear on the screen. The main menu allows you to select from several setup functions and one exit. Use arrow keys to select among the items and press Enter to accept or enter the submenu.

Main

The Main menu is the first screen that you will see when you enter the BIOS Setup Utility.

System Date

The date format is <day>, <month>, <date>, <year>. Day displays a day, from Monday to Sunday. Month displays the month, from January to December. Date displays the date, from 1 to 31. Year displays the year, from 1999 to 2099.

System Time

The time format is <hour>, <minute>, <second>. The time is based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00. Hour displays hours from 00 to 23. Minute displays minutes from 00 to 59. Second displays seconds from 00 to 59.

Access Level

Displays the access level of the current user in the BIOS.

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Advanced

The Advanced menu allows you to configure your system for basic operation. Some entries are defaults required by the system board, while others, if enabled, will improve the performance of your system or let you set some features according to your preference.

Setting incorrect field values may cause the system to malfunction.

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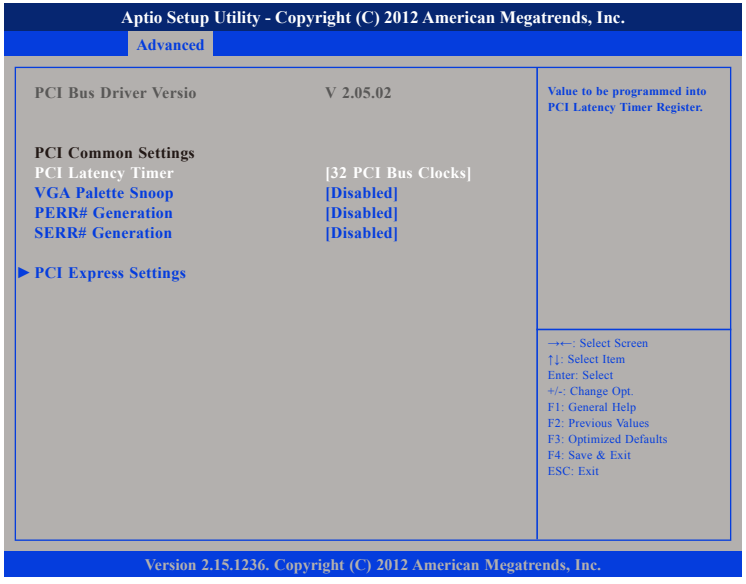
PCI Subsystem Settings

This section is used to configure the PCI.



PCI Latency Timer

This feature is used to select the length of time each PCI device will control the bus before another takes over. The larger the value, the longer the PCI device can retain control of the bus. Since each access to the bus comes with an initial delay before any transaction can be made, low values for the PCI Latency Timer will reduce the effectiveness of the PCI bandwidth while higher values will improve it.

VGA Palette Snoop

Enables or disables the VGA palette registers snooping.

PERR# Generation

Enables or disables the PCI device to generate PERR#.

SERR# Generation

Enables or disables the PCI device to generate SERR#.

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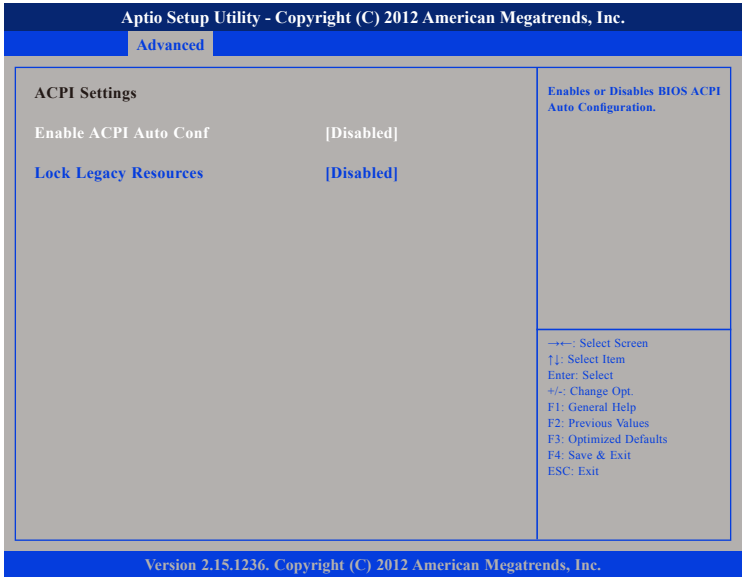
ACPI Settings

This section is used to configure ACPI settings.



Enable ACPI Auto Conf

Enables or disables BIOS ACPI auto configuration.

Lock Legacy Resources

Enables or disables lock of legacy resources

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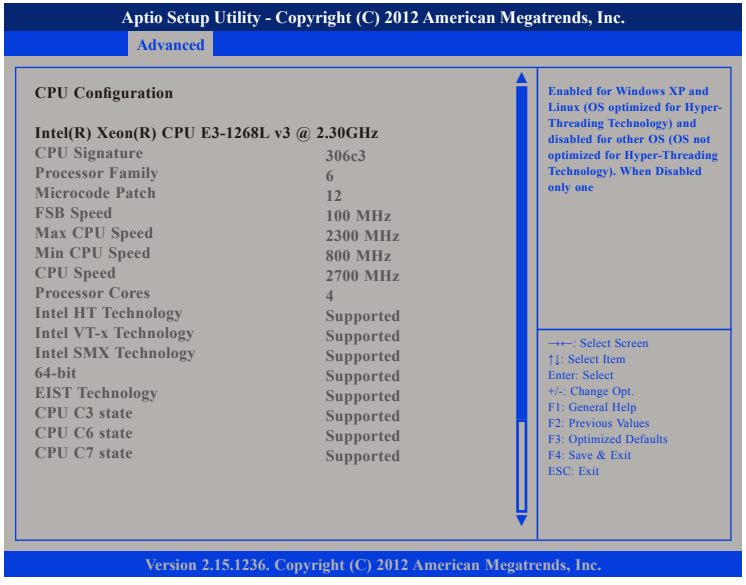
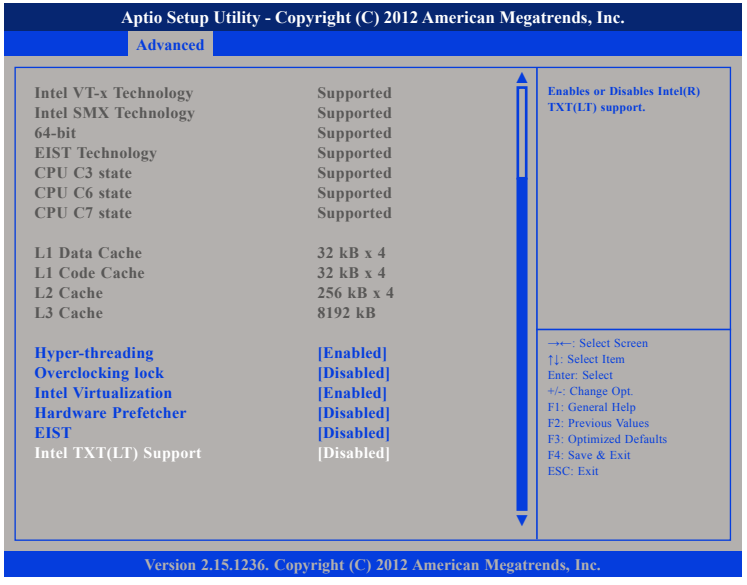
CPU Configuration

This section is used to configure the CPU.


Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.
Advanced
CPU Configuration
Intel(R) Xeon(R) CPU E3-1268L v3 @ 2.30GHz
CPU Signature 306c3
Processor Family 6
Microcode Patch 12
FSB Speed 100 MHz
Max CPU Speed 2300 MHz
Min CPU Speed 800 MHz
CPU Speed 2700 MHz
Processor Cores 4
Intel HT Technology Supported
Intel VT-x Technology Supported
Intel SMX Technology Supported
64-bit Supported
EIST Technology Supported
CPU C3 state Supported
CPU C6 state Supported
CPU C7 state Supported
Enabled for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and disabled for other OS (OS not optimized for Hyper-Threading Technology). When Disabled only one
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.



Hyper-Threading

Enable this field for Windows XP and Linux which are optimized for Hyper-Threading technology. Select disabled for other OSes not optimized for Hyper-Threading technology. When disabled, only one thread per enabled core is enabled.

Overclocking Lock

Enables or disables overclocking lock.

Intel® Virtualization

When this field is set to Enabled, the VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.

Hardware Prefetcher

Turns on or off the MLC streamer prefetcher

EIST

Enables or disables Intel® SpeedStep.

Intel TXT(LT) Support

Enables or disables Intel TXT(LT).

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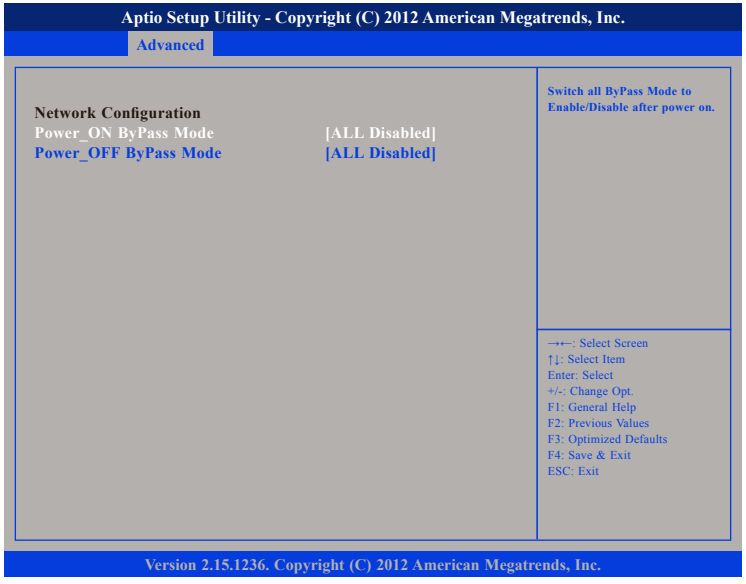
Network Configuration

This section is used to configure the network settings.


Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.
Advanced
Network Configuration
Power_ON ByPass Mode [ALL Disabled]
Power_OFF ByPass Mode [ALL Disabled]
Switch all ByPass Mode to Enable/Disable after power on.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.

Power_ON ByPass Mode

Enables or disables the LAN module bypass mode after the system powers on.

Power_OFF ByPass Mode

Enables or disables the LAN module bypass mode after the system powers off.

SATA Configuration

This section is used to configure the SATA drives.

SATA Controller(s)

Enables or disables the SATA controller.

SATA Mode Selection

Configures the SATA as IDE, AHCI or RAID mode.

IDE This option configures the Serial ATA drives as Parallel ATA physical storage device.

AHCI This option configures the Serial ATA drives to use AHCI (Advanced Host Controller Interface). AHCI allows the storage driver to enable the advanced Serial ATA features which will increase storage performance.

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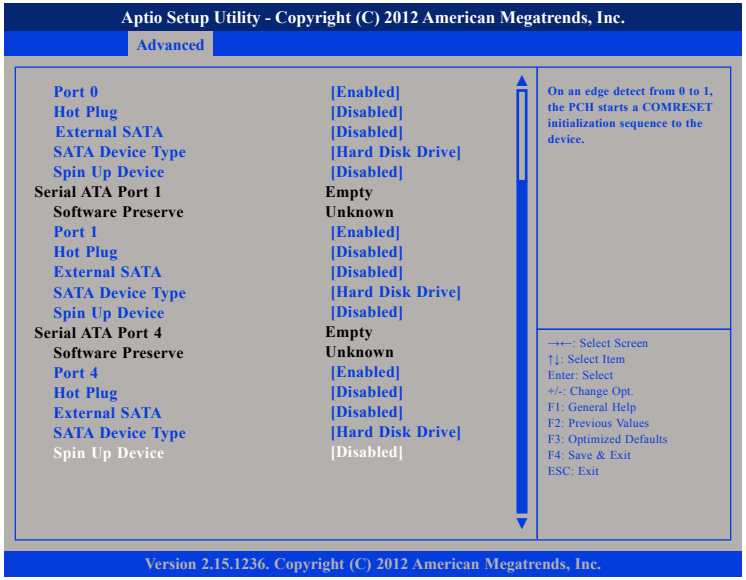
Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.
Advanced
Port 0 [Enabled]
Hot Plug [Disabled]
External SATA [Disabled]
SATA Device Type [Hard Disk Drive]
Spin Up Device [Disabled]
Serial ATA Port 1 Empty
Software Preserve Unknown
Port 1 [Enabled]
Hot Plug [Disabled]
External SATA [Disabled]
SATA Device Type [Hard Disk Drive]
Spin Up Device [Disabled]
Serial ATA Port 4 Empty
Software Preserve Unknown
Port 4 [Enabled]
Hot Plug [Disabled]
External SATA [Disabled]
SATA Device Type [Hard Disk Drive]
Spin Up Device [Disabled]
On an edge detect from 0 to 1, the PCH starts a COMRESET initialization sequence to the device.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
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SATA Test Mode
Enables or disables SATA test mode.

Aggressive LPM Support
Enables or disables agressive LPM support.

SATA Controller Speed
Configures the SATA controller as Gen1, Gen2 or Gen3.

Port 0 to Port 4
Enables or disables SATA port 0 to port 4.

Hot Plug
Enables or disables hot plugging feature on SATA port 0 to port 4.

External SATA
Enables or disables the external SATA option on SATA port 0 to port 4.

SATA Device Type
The options are Hard Disk Drive and Solid State Drive.

Spin Up Device
Enables or disables staggered spin up on devices connected to SATA port 0 to port 4.

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USB Configuration

This section is used to configure the USB.

Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.
Advanced
USB Configuration
USB Module Version 8.10.27
USB Devices:
1 Keyboard, 2 Hubs
Legacy USB Support [Enabled]
EHCI Hand-off [Disabled]
USB Mass Storage Driver [Enabled]
USB hardware delays a
USB transfer time-out [20 sec]
Device reset time-out [20 sec]
Device power-up delay [Auto]
Enables Legacy USB support. AUTO option disables legacy Support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.

Legacy USB Support

Enable Enables Legacy USB.
Auto Disables support for Legacy when no USB devices are connected.
Disable Keeps USB devices available only for EFI applications.

EHCI Hand-Off

This is a workaround for OSs that does not support EHCI hand-off. The EHCI ownership change should be claimed by the EHCI driver.

USB Mass Storage Driver

Enables or disables USB mass storage device driver support.

USB Transfer Time-out

The time-out value for control, bulk, and Interrupt transfers.

Device Reset Time-out

Selects the USB mass storage device's start unit command timeout.

Device Power-up Delay

Maximum time the value will take before it properly reports it self to the Host Controller. "Auto" uses default value: for a Root port it is 100 ms, for a Hub port the delay is taken from Hub descriptor.

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Super IO Configuration

This section is used to configure the serial ports.

Super IO Chip
Displays the Super I/O chip used on the board.

Serial Port 0 Configuration
Configuration settings for serial port 0.

Serial Port 1 Configuration
Configuration settings for serial port 1.

Parallel Port Configuration
Configuration settings for parallel port.

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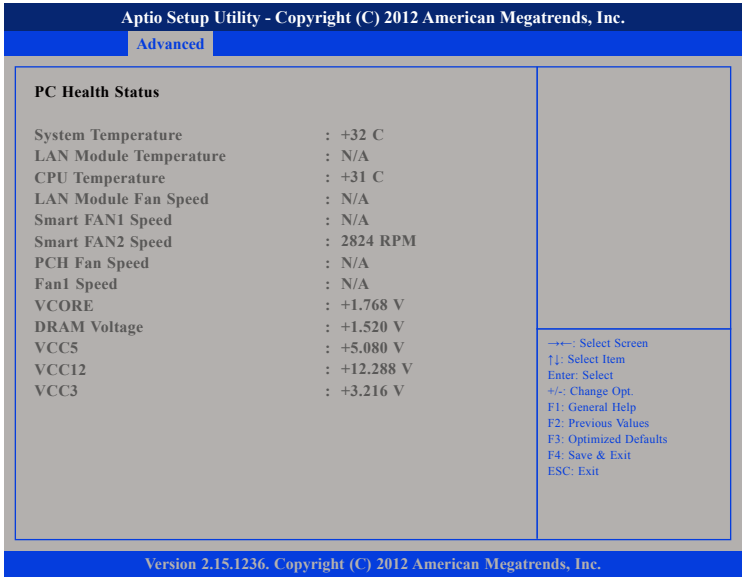
H/W Monitor

This section is used to monitor hardware status such as temperature, fan speed and voltages.


Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.
Advanced
PC Health Status
System Temperature : +32 C
LAN Module Temperature : N/A
CPU Temperature : +31 C
LAN Module Fan Speed : N/A
Smart FAN1 Speed : N/A
Smart FAN2 Speed : 2824 RPM
PCH Fan Speed : N/A
Fan1 Speed : N/A
VCORE : +1.768 V
DRAM Voltage : +1.520 V
VCC5 : +5.080 V
VCC12 : +12.288 V
VCC3 : +3.216 V
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
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System Temperature
Detects and displays the current system temperature.

CPU Temperature
Detects and displays the current CPU temperature.

LAN Module Fan Speed
Detects and displays the fan speed of the LAN module.

Smart Fan1 Speed and Smart Fan2 Speed
Detects and displays the fan speed of smart fan1 and smart fan2.

PCH Fan Speed
Detects and displays the PCH fan speed.

Fan1 Speed
Detects and displays the Fan1 speed.

VCORE
Detects and displays the VCore voltage.

DRAM Voltage
Detects and displays the DRAM voltage.

VCC5
Detects and displays 5V voltage.

VCC12
Detects and displays 12V voltage.

VCC3
Detects and displays 3.3V voltage.

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Serial Port Console Redirection

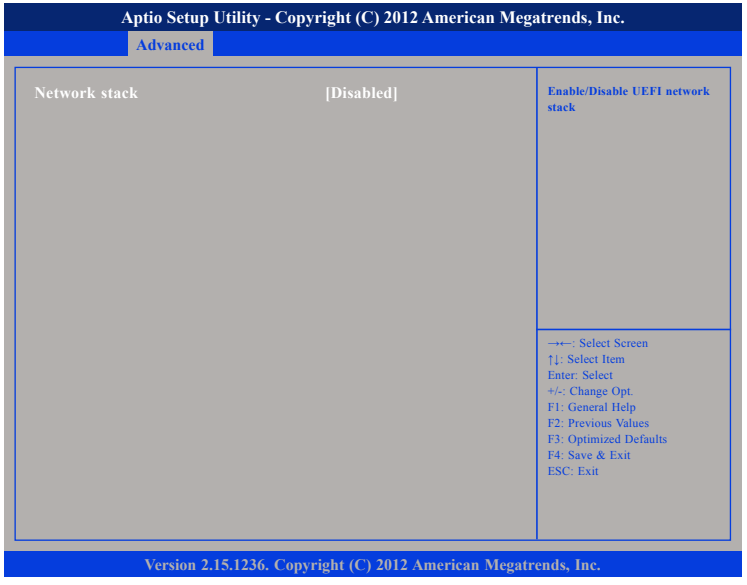
This section is used to configure the serial port that will be used for console redirection.

Console Redirection

Enables or disables the console redirection.

Network Stack

This section is used to configure the network stack.



Network Stack

Enables or disables UEFI network stack.

Chipset

This section gives you functions to configure the system based on the specific features of the chipset. The chipset manages bus speeds and access to system memory resources.

PCH-IO Configuration

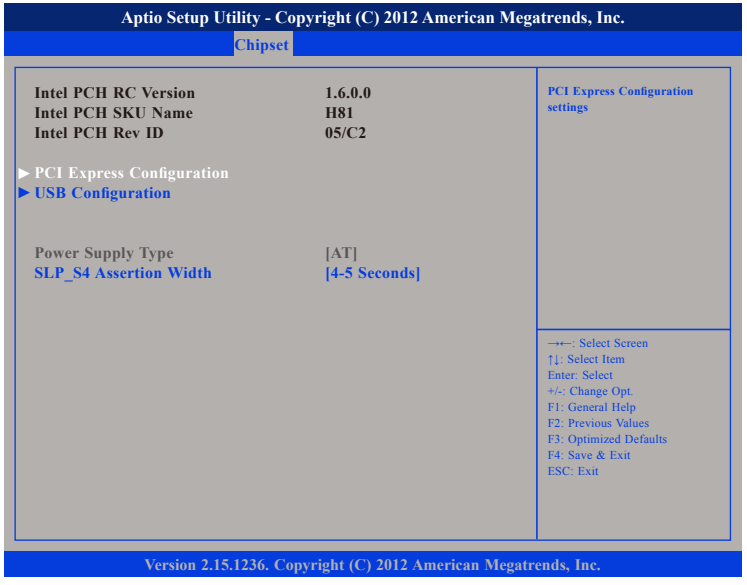
This field is used to configure PCH parameters.

System Agent (SA) Configuration

This field is used to configure System Agent (SA) parameters.

PCH-IO Configuration

This section is used to configure PCH-IO settings.


Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.
Chipset
Intel PCH RC Version 1.6.0.0
Intel PCH SKU Name H81
Intel PCH Rev ID 05/C2
▶ PCI Express Configuration
▶ USB Configuration
Power Supply Type [AT]
SLP_S4 Assertion Width [4-5 Seconds]
PCI Express Configuration settings
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.

SLP_S4 Assertion Width

Select a minimum assertion width of the SLP_S4# signal.

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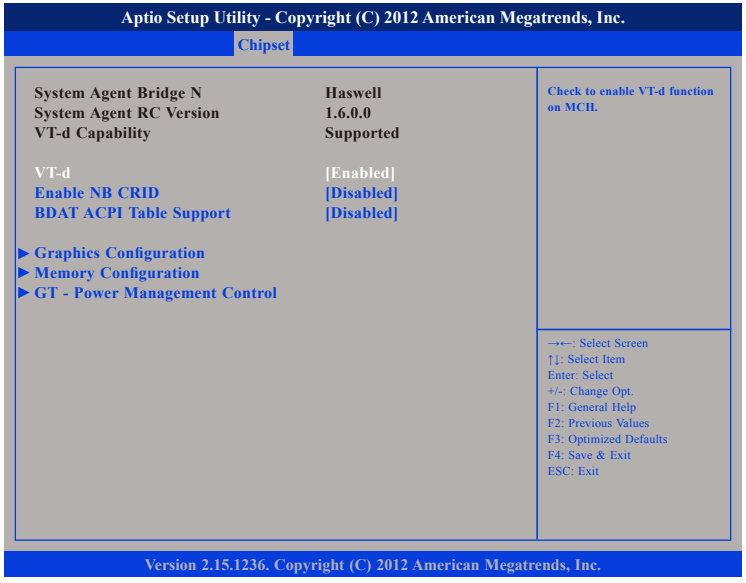
System Agent (SA) Configuration

This section is used to configure System Agent (SA) settings.



VT-d

Enables or disables the VT-d.

Enable NB CRID

Enables or disables NB CRID workaround.

BDAT ACPI Table Support

Enables or disables BDAT ACPI Table support.

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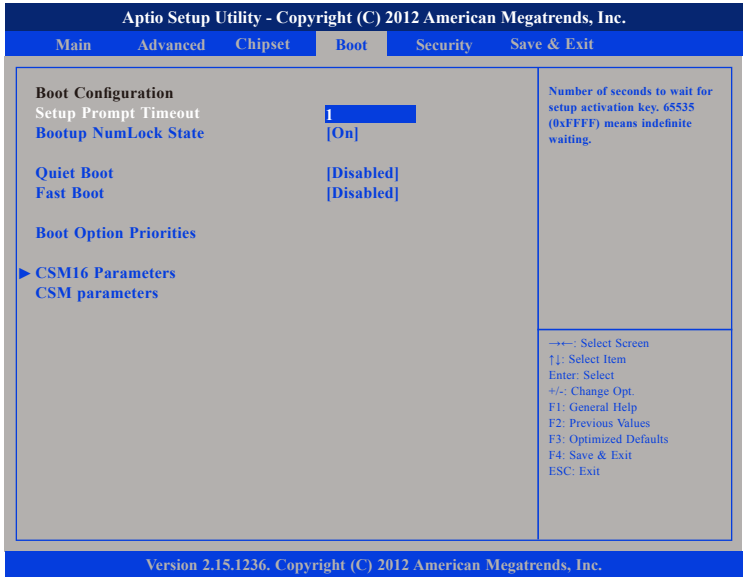
Boot

This section is used to configure the boot features.



Setup Prompt Timeout

Selects the number of seconds to wait for the setup activation key. 65535(0xFFFF) denotes indefinite waiting.

Bootup NumLock State

This allows you to determine the default state of the numeric keypad. By default, the system boots up with NumLock on wherein the function of the numeric keypad is the number keys. When set to Off, the function of the numeric keypad is the arrow keys.

Quiet Boot

Enabled	Displays OEM logo instead of the POST messages.
Disabled	Displays normal POST messages.

Fast Boot

When enabled, the BIOS will shorten or skip some check items during POST. This will decrease the time needed to boot the system.

Boot Option Priorities

Adjust the boot sequence of the system. Boot Option #1 is the first boot device that the system will boot from, next will be #2 and so forth.

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Security

Administrator Password

Select this to reconfigure the administrator's password.

User Password

Select this to reconfigure the user's password.

Save & Exit

Save Changes and Exit

To save the changes and exit the Setup utility, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes. You can also press <F4> to save and exit Setup.

Discard Changes and Exit

To exit the Setup utility without saving the changes, select this field then press <Enter>. You may be prompted to confirm again before exiting. You can also press <ESC> to exit without saving the changes.

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Save Changes and Reset
To save the changes and reset, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes.

Discard Changes and Reset
To exit the Setup utility without saving the changes, select this field then press <Enter>. You may be prompted to confirm again before exiting.

Save Changes
To save changes and continue configuring the BIOS, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes.

Discard Changes
To discard the changes, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes to discard all changes made and restore the previously saved settings.

Restore Defaults
To restore the BIOS to default settings, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes.

Save as User Defaults
To use the current configurations as user default settings for the BIOS, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes.

Restore User Defaults
To restore the BIOS to user default settings, select this field then press <Enter>. A dialog box will appear. Confirm by selecing Yes.

Boot Override
To bypass the boot sequence from the Boot Option List and boot from a particular device, select the desired device and press <Enter>.

Launch EFI Shell From Filesystem Device
Launches the EFI shell.

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Appendix A: Bypass Register

Register Map

The following tables are the Register Map for NSA 3150.

PCB and CPLD Release Version Register (LSB)							
Offset 0xF1							
7	6	5	4	3	2	1	0
R				R			
PCB version (LSB)				CPLD release version (LSB)			

Power ON State Bypass Control Status Register							
Offset 0xF3							
7	6	5	4	3	2	1	0
R/W		R/W	R/W	R/W	R/W	R/W	R/W
Bypass Mode		Segment6	Segment5	Segment4	Segment3	Segment2	Segment1

Bypass Timer Configuration Register							
Offset 0xF2							
7	6	5	4	3	2	1	0
R	X	X	X	X	R/W		
Segment Timer Expired	Unused	Unused	Unused	Unused	Global Timeout Value		

Power OFF State Bypass Control Status Register							
Offset 0xF7							
7	6	5	4	3	2	1	0
R/W	R/W	R/W	R/W	R/W	R/W	R/W	R/W
Unused	Unused	Segment6	Segment5	Segment4	Segment3	Segment2	Segment1

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Slot Select Register							
Offset 0xF9							
7	6	5	4	3	2	1	0
R/W	R/W	R/W	R/W	R/W	R/W	R/W	R/W
Slot ID 7	Slot ID 6	Slot ID 5	Slot ID 4	Slot ID 3	Slot ID 2	Slot ID 1	Slot ID 0

PCB and CPLD Release Version Register (MSB)							
Offset 0xFD							
7	6	5	4	3	2	1	0
R				R			
PCB version (MSB) / CPLD dot version				CPLD release version (MSB)			

Bypass Time/Force Mode Control Register							
Offset 0xFE							
7	6	5	4	3	2	1	0
R				R/W	R/W	R/W	R/W
CPLD identify bit				Unused	Unused	Unused	Timer/ force mode independent

Register Bit Definitions

PCB and CPLD Release Version Register (LSB): F1		
Bit Field	Name	Value
3:0	CPLD version LSB	CPLD version LSB, for CPLD release version control, the MSB info at address 'FD', **Read only**
7:4	PCB version LSB	PCB version LSB, the MSB info at address 'FD', **Read only**

Bypass Timer Configuration Register: F2		
Bit Field	Name	Value
2:0	Timer Value	000 = 0 second, timer immediately expired 001 = 1 second 010 = 2 second 011 = 4 second 100 = 8 second 101 = 16 second 110 = 32 second 111 = 64 second This register is available in Timer Enable mode. Timer value of 1 to 7 is required to be written before expiration of the hardware timer. When the timer expires, both segment relays which have been enabled will close. Note: The timer will recount while read/write F2 register.
6:3	Unused	Unused
7	Segment Timer Expired	**Read only bit:** 0 = Timer has not expired 1 = Timer has expired, de-assert while leave Timer mode

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Power ON State Bypass Control Status Register: F3		
Bit Field	Name	Value
5:0	Segment 6 to 1	Segment bypass function control on Power ON state. Bit[x] corresponds to segment[x+1], ex: Bit0 control to segment1, … Bit5 control to segment6 0 = Segment[x] disable 1 = Segment[x] enable
7:6	Bypass Mode	These two bits defined the bypass in timer mode or force mode. Note: The timer will recount while read/write F3 register Limitation: Changing F3 segment bit during timer counting, the timing mode segment will controlled by last change value. Bypass Mode Table:

Bit 7	Bit 6	Action
0	0	Timer Disable: Disable Timer mode function.
0	1	Force Enable: Engage bypass relays on segments enable in segment mask.
1	0	Force Disable: Disable bypass relays immediately on segments enabled in mask.
1	1	Timer Enable: Segments enabled in mask are under Timer control.

Power OFF State Bypass Control Status Register: F7		
Bit Field	Name	Value
5:0	Segment 6 to 1	Segment bypass function control on Power OFF state. Bit[x] corresponds to segment[x+1], ex: Bit0 control to segment1, … Bit5 control to segment6 0 = Segment[x] disable 1 = Segment[x] enable
7:6	Unused	Unused.

Slot Select Register: F9		
Bit Field	Name	Value
7:0	Slot ID bit 7 to 0	Main board: The bypass function workable while Slot ID set to 0x00h Lan module: The bypass function workable while Slot ID value meet H/W setting, The value do not set to 0x00h Note: If all of boards not fill slot id value on platform, read all registers will return 0xFF

PCB and CPLD Release Version Register (MSB): FD		
Bit Field	Name	Value
3:0	CPLD version MSB	CPLD version MSB, for CPLD release version control, the LSB info at address 'F1', **Read only**
7:4	CPLD dot / PCB version MSB	The value >= "A" is CPLD dot version information. The value < "A" indicate PCB version MSB, **Read only**

Bypass Timer/Force Mode Control Register: FE		
Bit Field	Name	Value
0	Timer/force mode independent	0 = Timer/force mode dependent, the timer will stop in force mode condition. 1 = Timer/force mode Independent, the timer will stop in timer disable condition.
3:1	Unused	Unused
7:4	New CPLD	Always read "0xa", **Read only**

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